CLAIMS

We claim:

1. An apparatus including:

a media dispenser,

wherein the dispenser is adapted for use in an automated banking machine,

wherein the dispenser includes a currency note stack transport arrangement,

wherein the transport arrangement includes rotatable roller shafts,

wherein each roller shaft includes plural rollers thereon,

wherein each roller includes a convexly tapered outer circumferential surface,

wherein the transport arrangement includes a plurality of belts,

wherein the belts are substantially parallel to each other,

wherein each belt is respectively supported on a pair of rollers,

wherein the transport arrangement includes a push device,

wherein the push device is operative to engagingly move a stack of notes in a direction substantially parallel to the belts.

2. The apparatus according to claim 1 wherein the outer circumferential surface includes a center portion and tapering portions, wherein the center portion is located between tapering portions, wherein the diameter of each tapering portion narrows in a direction extending away from the center portion.

3. The apparatus according to claim 2 wherein the center portion comprises a non-tapering substantially flat plateau.

4. The apparatus according to claim 2 wherein each pair of rollers is operative to cause a loose belt supported thereon to climb a tapering portion toward a plateau.

5. The apparatus according to claim 4 wherein the center portion comprises a belt rail, wherein the roller shafts are arranged to enable each pair of rollers to automatically rerail a belt onto a belt rail.

6. The apparatus according to claim 1 wherein the push device includes a plurality of openings, wherein the belts pass through the push device via the openings, and wherein the belts are trapped in the push device.

7. The apparatus according to claim 1 wherein the transport arrangement includes a rotatable paddle wheel shaft, wherein the paddle wheel shaft includes a plurality of paddle wheels, wherein each paddle wheel includes a plurality of flexible paddles.

8. The apparatus according to claim 7 wherein the paddles on a paddle wheel are substantially equally spaced.

9. The apparatus according to claim 8 wherein each paddle is angularly aligned with a paddle on an adjacent paddle wheel.

10. The apparatus according to claim 9 wherein angularly aligned paddles are operative to simultaneously engage a currency note.

11. The apparatus according to claim 7 wherein the transport arrangement includes a note stacking tray, wherein the paddles are operative to transport a currency note to the tray.

12. The apparatus according to claim 11 wherein the tray includes tapered portions, wherein the paddles comprise distal ends, wherein when the tray is in a note stacking position the tapered portions enable the distal ends to avoid contacting the tray during rotation of the paddle wheels.

13. The apparatus according to claim 1 wherein the transport arrangement includes a note stacking tray, wherein the tray is movable between a note stacking position and a stack discharging position.

14. The apparatus according to claim 13 wherein the tray includes tray rails, wherein the tray rails are operative to support a stack of notes, wherein the transport arrangement includes floor rails, wherein the tray is vertically movable to place the tray rails in planar parallel alignment with the floor rails.

15. The apparatus according to claim 14 wherein the push device is operative to push a stack of notes from the tray rails onto the floor rails.

16. The apparatus according to claim 15 wherein the push device is operative to further push the stack of notes along the floor rails toward a roller shaft.

17. The apparatus according to claim 16 wherein the belts are operative to drive the push device in a direction substantially parallel to the belts.

18. The apparatus according to claim 1 wherein the media dispenser comprises a currency dispenser in an ATM, wherein the currency dispenser contains currency notes therein.

19. A method of operating the apparatus recited in claim 13, comprising:

(a) placing at least one currency note on the tray while the tray is in the note stacking position;

(b) subsequent to (a), moving the tray while the at least one currency note is thereon from the note stacking position to the stack discharging position;

(c) moving the push device in a direction substantially parallel to the belts to cause the at least one currency note to be moved from the tray.

20. An apparatus including:

a media dispenser,

wherein the dispenser is adapted for use in an automated banking machine,

wherein the dispenser includes a currency note stack transport arrangement,

wherein the transport arrangement includes a note stacking tray,

wherein the tray is movable between a note stacking position and a stack discharging position,

wherein the transport arrangement includes a rotatable paddle wheel shaft,

wherein the paddle wheel shaft includes a plurality of paddle wheels,

wherein each paddle wheel includes a plurality of flexible paddles,

wherein the paddles are operative to transport a currency note to the tray,

wherein the transport arrangement includes rotatable roller shafts,

wherein each roller shaft includes plural rollers thereon,

wherein each roller includes an outer circumferential surface,

wherein the outer circumferential surface includes a convexly tapered surface having a center portion and tapering portions,

wherein the center portion is located between tapering portions,

wherein the diameter of each tapering portion narrows in a direction extending away from the center portion,

wherein the center portion comprises a non-tapering substantially flat plateau,

wherein the transport arrangement includes a plurality of belts,

wherein the belts are substantially parallel to each other,

wherein each belt is respectively supported on a pair of rollers,

wherein each pair of rollers is operative to cause a loose belt supported thereon to automatically climb a tapering portion toward a plateau,

wherein the transport arrangement includes a push device,

wherein the push device includes a plurality of openings,

wherein the belts pass through the push device via the openings,

wherein the belts are trapped in the push device,

wherein the push device is operative to push a stack of notes from the tray in a direction substantially parallel to the belts.